



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,477	01/29/2004	Motomi Kohno	31721-200490	3729
26694	7590	09/27/2006	EXAMINER	
VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998				HAGEMAN, MARK
			ART UNIT	PAPER NUMBER
			3653	

DATE MAILED: 09/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,477	KOHNO, MOTOMI	
	Examiner Mark Hageman	Art Unit 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 04 January 2006.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 05 May 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1-4-2006</u> . | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:.

Reference character "h" in figure 1.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The abstract of the disclosure is objected to because of the following minor formalities:

-Line 3 "is whirled" should read are whirled

-Line 4 "part of lightweight" should read part of the lightweight

Correction is required. See MPEP § 608.01(b).

Art Unit: 3653

3. The disclosure is objected to because of the following informalities:

-Page 1 last line "Fig. 14" should read "Fig. 21" in order to agree with the drawings

-Page 3 line 7 "invention is to" should read "invention to"

-Page 3 line 20 "most part of" should read "most of"

-Page 3 line 22 "part of lightweight" should read "part of the lightweight"

-Page 4 line 1 "air to" should read "air into"

-Page 5 last line "most part of" should read "most of"

-Page 6 line 12 "aspect" should read "aspects"

-Page 18 line 8 "and taken" should read "and are taken"

-The phrase "is comprised a" is found numerous place in the specification specifically on pages 3-6. Where present it should be replaced by a grammatically correct phrase such as "is comprised of a" etc.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims have numerous 112 second paragraph issues of which the following

are only a few examples. The applicant is encouraged to rewrite the claims. The claims have been treated as understood by the examiner.

Antecedent basis issues (Claim 1 examples)- “the primary separation space”, the direction”, “the inner wall surface”, “the upwardly flowing airflow” etc.

Indefinite language (Claim 8 example)- “and the like”

6. Claims 3-7 are rejected under 35 U.S.C. 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, MPEP section 2173.05(p) states, “A single claim which claims both an apparatus and a the method steps of using he apparatus is indefinite under U.S.C. 112 second paragraph.” Independent claim 3 is a device claim that makes reference to the method of claim 1. This is indefinite as it is unclear which limitations are present in the claim. The claims have been treated as an independent device claim with no patentable weight given to the reference to claim 1.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 3-7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 3 presents neither a clear machine nor process claim but rather a possible overlap of the two statutory classes of invention set forth in U.S.C. 35 101 which is drafted to set forth the statutory classes of invention in the alternative only.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 5-7, are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,872,973 to Ikebuchi et al. Ikebuchi discloses, a primary separation step of introducing raw grains containing the lightweight grains, which are to be separated, together with primary air into the primary separation space in the direction to allow the material to whirl upward along the inner wall surface of the cylindrical section of the primary separation space (c2 lines 50+), so that most part of the lightweight substances contained in the raw grains are guided to the exhaust port (4) by the upwardly flowing airflow (c4 lines 5+) in the pipe and the raw grains and part of lightweight grains stay in a certain flow area by frictional resistance with respect to the wall surface generated by whirl (c2 lines 55+) and then are dropped into a secondary separation space by their own weight (c2 lines 58+),

a secondary separation step of blowing secondary air to the lower portion of the secondary separation space through a slit to the center toward the raw grains dropping into the conical section in the secondary separation space on the downside in the

primary separation step so as to blow the lightweight substances in the raw grains upward to the primary separation space (c4 lines 2+); and

a discharging step of taking the raw grains with the lightweight grains removed continuously out from the unloading port at the lower portion of the conical section (3 and c3 lines 38+).

-Re claim 2, Ikebuchi further discloses, a tertiary separation step of blowing tertiary air from below the secondary air blowing position upwardly to blow remaining lightweight grains to the secondary separation space (18, 19 figure 2 and C4 lines 2+).

-Re claim 3, Ikebuchi further discloses, a cylindrical section (20) having an exhaust port (4) at the upper portion thereof;

a conical section (1a) provided below the cylindrical section;

a raw grain feeding unit for feeding raw grains in the direction to whirl the raw grains upward along the inner periphery of the cylindrical section above the conical section (13 and c2 lines 50+);

a lightweight grain separating unit (1) for taking the lightweight grains in the raw grains out from the upper portion of the cylindrical section;

a secondary air blowing unit (19) for blowing the secondary air toward the raw grains being dropped from the cylindrical section upward at the lower portion of the conical section to move the fine grains upward to the cylindrical section (c4 lines 2+); and

a unit for discharging raw material from the lower portion of the conical section (3 and c3 lines 38+).

Art Unit: 3653

-Re claim 5 Ikebuchi further discloses, a secondary air intake chamber (figure 2 lower portion) connected via a slit (figure 2 and c3 lines 62+) provided at the lower end of the conical section for taking compressed air therefrom (figure 2).

-Re claim 6 Ikebuchi further discloses, the secondary air blowing unit blows a high-speed secondary airflow from the slit toward a stabilizer (5) provided at the lower end of the conical section (figure 2).

-Re claim 7 Ikebuchi further discloses a tertiary air blowing unit (18 and c4 lines 4+) blows a high speed secondary airflow from a slit toward a stabilizer provided at the lower end of the conical section (figure 2).

10. Claims 1-3, 5-7, are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,667,600 to Oi et al. Oi discloses, a primary separation step of introducing raw grains containing the lightweight grains, which are to be separated, together with primary air into the primary separation space in the direction to allow the material to whirl upward along the inner wall surface of the cylindrical section of the primary separation space (c2 lines 58+), so that most part of the lightweight substances contained in the raw grains are guided to the exhaust port (21) by the upwardly flowing airflow (c3 lines 8+) in the pipe and the raw grains and part of lightweight grains stay in a certain flow area by frictional resistance with respect to the wall surface generated by whirl and then are dropped into a secondary separation space by their own weight (c2 lines 65+).

a secondary separation step of blowing secondary air to the lower portion of the secondary separation space through a slit to the center toward the raw grains dropping into the conical section in the secondary separation space on the downside in the

primary separation step so as to blow the lightweight substances in the raw grains upward to the primary separation space (c3 lines 8+); and

a discharging step of taking the raw grains with the lightweight grains removed continuously out from the unloading port at the lower portion of the conical section (11' and c2 lines 35+).

-Re claim 2, Oi further discloses, a tertiary separation step of blowing tertiary air from below the secondary air blowing position upwardly to blow remaining lightweight grains to the secondary separation space (4, 9, c3 lines 8+).

-Re claim 3, Oi further discloses, a cylindrical section (13, 18) having an exhaust port (21) at the upper portion thereof;

a conical section (11) provided below the cylindrical section;

a raw grain feeding unit for feeding raw grains in the direction to whirl the raw grains upward along the inner periphery of the cylindrical section above the conical section (6, 7 and c2 lines 26+);

a lightweight grain separating unit (figure 1 and abstract) for taking the lightweight grains in the raw grains out from the upper portion of the cylindrical section;

a secondary air blowing unit (5) for blowing the secondary air toward the raw grains being dropped from the cylindrical section upward at the lower portion of the conical section to move the fine grains upward to the cylindrical section (c3 lines 8+) and

a unit for discharging raw material from the lower portion of the conical section (11' and c2 lines 35+).

Art Unit: 3653

-Re claim 5 Oi further discloses, a secondary air intake chamber (figure 1) connected via a slit (16) provided at the lower end of the conical section for taking compressed air therefrom (c2 lines 45+).

-Re claim 6 Oi further discloses, the secondary air blowing unit blows a high-speed secondary airflow from the slit toward a stabilizer (14) provided at the lower end of the conical section (figure 1).

-Re claim 7 Oi further discloses a tertiary air blowing unit (4, 9 and c3 lines 8+) blows a high speed secondary airflow from a slit toward a stabilizer provided at the lower end of the conical section (14).

11. Claims 1, 3, 4 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002035699 to Hiroshi. Hiroshi discloses a primary separation step of introducing raw grains containing the lightweight grains, which are to be separated, together with primary air into the primary separation space in the direction to allow the material to whirl upward along the inner wall surface of the cylindrical section of the primary separation space, so that most part of the lightweight substances contained in the raw grains are guided to the exhaust port by the upwardly flowing airflow in the pipe and the raw grains and part of lightweight grains stay in a certain flow area by frictional resistance with respect to the wall surface generated by whirl and then are dropped into a secondary separation space by their own weight (abstract and figure 1),
a secondary separation step of blowing secondary air to the lower portion of the secondary separation space through a slit to the center toward the raw grains dropping

into the conical section in the secondary separation space on the downside in the primary separation step so as to blow the lightweight substances in the raw grains upward to the primary separation space (para 22 lines 1+ and figure 1); and

a discharging step of taking the raw grains with the lightweight grains removed continuously out from the unloading port at the lower portion of the conical section (12).

-Re claim 3 Hiroshi further discloses, a cylindrical section (6a) having an exhaust port (7) at the upper portion thereof;

a conical section (6c) provided below the cylindrical section;

a raw grain feeding unit for feeding raw grains in the direction to whirl the raw grains upward along the inner periphery of the cylindrical section above the conical section (9, 10 and abstract)

a lightweight grain separating unit (7, 8 abstract) for taking the lightweight grains in the raw grains out from the upper portion of the cylindrical section;

a secondary air blowing unit (para 22 and figure 1) for blowing the secondary air toward the raw grains being dropped from the cylindrical section upward at the lower portion of the conical section to move the fine grains upward to the cylindrical section (abstract); and

a unit for discharging raw material from the lower portion of the conical section (12 and abstract).

-Re claim 4, Hiroshi further discloses, an upwardly oriented tangent induction pipe opening on the inner wall surface of the cylindrical section (10 figure 1 and abstract).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikebuchi in view of US 4,776,950 to Green et al. Regarding claims 8 and 10 Ikebuchi discloses all the limitations of the claim except the exhaust pipe opening in the direction opposite to the whirling direction. Green discloses the exhaust pipe opening in the direction opposite to the whirling direction (18 figure 2) for the purpose of improving the classification efficiency (c1 lines 26+).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Ikebuchi to include the exhaust pipe opening in the direction opposite to the whirling direction, as taught by Green,) for the purpose of improving the classification efficiency.

-Re claim 9, Ikebuchi further discloses, a tertiary separation step of blowing tertiary air from below the secondary air blowing position upwardly to blow remaining lightweight grains to the secondary separation space (18, 19 figure 2 and C4 lines 2+).

-Re claim 11, Ikebuchi further discloses, a tertiary air blowing unit (18 and c4 lines 4+) for blowing tertiary air from below the secondary air blowing unit (figure 2).

-Re claim 12 Ikebuchi further discloses, the secondary air blowing unit blows a high-speed secondary airflow from the slit toward a stabilizer (5) provided at the lower end of the conical section (figure 2).

14. Claims 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oi in view of US 4,776,950 to Green et al. Regarding claims 8 and 10 Oi discloses all the limitations of the claim except the exhaust pipe opening in the direction opposite to the whirling direction. Green discloses the exhaust pipe opening in the direction opposite to the whirling direction (18 figure 2) for the purpose of improving the classification efficiency. (c1 lines 26+).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Oi to include the exhaust pipe opening in the direction opposite to the whirling direction, as taught by Green,) for the purpose of improving the classification efficiency.

-Re claim 9, Oi further discloses, a tertiary separation step of blowing tertiary air from below the secondary air blowing position upwardly to blow remaining lightweight grains to the secondary separation space (4, 9 and c3 lines 8+).

-Re claim 11, Oi further discloses, a tertiary air blowing unit (4, 9 and c3 lines 8+) for blowing tertiary air from below the secondary air blowing unit (figure 1).

-Re claim 12 Oi further discloses, the secondary air blowing unit blows a high-speed secondary airflow from the slit (16) toward a stabilizer (14) provided at the lower end of the conical section (figure 1).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Hageman whose telephone number is (571) 272-3027. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCH



PATRICK MACKEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

Application/Control Number: 10/766,477
Art Unit: 3653

Page 14